INDEX OF AUTHORS

Abramson, Samuel, 270
Adams, S. L., 40, 281
Ajl, Samuel J., 23
Alexander-Jackson, Eleanor, 64
Allison, Marvin J., 270
Alture-Werber, Erna, 89
Alverson, Clara, 543
Ames, Ada May, 53
Ascoli, Alberto A., 89
Atkins, Kenneth N., 279

Bachmann, Barbara, 28
Bailey, John Hays, 7
Baker, Richard F., 4, 5
Baldwin, H. S., 271
Barber, Franklin W., 42
Baribeau, Betty J., 84
Barker, H. A., 381
Barnett, Rex O., 697
Bartholomew, James W., 268, 667, 668
Benedict, R. G., 24
Bennett, Byron L., 93
Berglund, Rosalind M., 9
Berkman, Sam, 6, 9
Bernheim, F., 68, 671
Bevilacqua, Ellen B., 68
Bhat, J. V., 381
Birkeland, Jorgen M., 6, 15, 82
Black, Luther A., 44
Blech, Helen, 27
Boeing, Paul J., 90
Bohnhoff, Marjorie, 8, 467
Boltjes, Ben H., 277
Borchers, Raymond, 519
Boroff, D. A., 85
Brady, Phillip J., 546
Branham, Sara E., 57
Braun, Armin C., 349
Braun, Werner, 2, 545
Brewer, C. R., 401
Brewer, John H., 32, 33
Brockmann, M. C., 23, 280
Brown, Gordon C., 75
Bruno, Pauline, 9
Bryson, Vernon, 87
Bucca, Matthew A., 71
Buchele, Luther, 83
Buck, Theodore C., Jr., 12
Burdon, Kenneth L., 58, 281
Burkes, Sudie, 417
Byrd, Chester L., 74

Campbell, Charlotte C., 263
Campbell, J. J. R., 22
Campbell, M. E., 32
Carlisle, Harold N., 56
Carlquist, Philip R., 265
Cartin, Rafael A., 280
Casey, Albert E., 75
Cavallito, Chester J., 7
Charney, Jesse, 101
Chemerda, Cecilia, 48
Chinn, Alice L., 495
Churchill, E. S., 43
Clark, J. Bennett, 767
Clarke, Norman A., 447
Cochrane, Vincent W., 29, 213
Coffey, Julia M., 275
Coffin, S. Farnum, 78
Cohen, Sophia M., 275
Colingsworth, D. R., 41
Colmer, Arthur R., 11
Conn, Harold J., 10, 291, 681
Conn, Jean E., 213
Cook, Elton S., 527
Cooper, Merlin L., 274
Cope, Elizabeth J., 11, 545
Copley, Michael J., 34
Coriell, Lewis L., 277
Corman, Julian, 149
Couch, James F., 34
Cox, Herald R., 74
Crain, Patti, 281
Cramer, D. L., 119
Crumb, Cretyl, 277
Cumberland, Mary C., 81

Davis, H., 277
Dawson, Roy C., 35
de Becze, G., 40
de Gara, P. F., 271
Dienes, Louis, 3, 231
Dienst, R. B., 90
Diller, Violet M., 274
Dimmick, Isabel, 291
Dodd, Katharine, 60
Doetsch, Raymond N., 18
Donovick, Richard, 425
Dorrell, I. B., 91
Dorrell, William W., 16
Douglas, H. C., 272
Downs, Cora M., 83
Dreyer, N. B., 82

Dubos, René J., 66
Dufrenoy, Jean, 127, 283, 719
Dulaney, E. L., 1
Duncan, Sarah B., 38
Dunphy, Donal L., 278
Dutky, S. R., 267
Dyar, M. T., 17, 483

Eagle, Harry, 6
Eaton, F. D., 88, 94
Edsall, Geoffrey, 31
Eisenstark, A., 183
Eisman, P. C., 668
Elrod, R. P., 349, 681
Emerson, Sterling, 195
Ercoli, N., 80
Esau, Paul, 546
Evans, Alice C., 495
Evans, Florence L., 175
Evans, James B., 266

Fabrizio, Angelina, 69
Falk, Carolyn R., 27
Faville, L. W., 697
Feldman, Harry A., 61
Feldman, William H., 67
Felsenfeld, Oscar, 73
Felton, Lloyd D., 87
Ferguson, W. W., 179
Fishbein, William I., 75
Fisher, James W., 60
Fisher, Kenneth C., 599
Fitzgerald, R. J., 68, 671
Flanders, Thelma, 79
Flower, Miriam S., 273
Foley, George E., 69, 90
Foter, Milton J., 43, 793
Fousek, Mildred D., 279
Foust, C. E., 21
Fox, Theodore A., 57
Francis, Thomas, Jr., 75
Fredericq, Pierre, 27, 661, 662, 785
Friedewald, W. F., 62
Frobisher, Martin, Jr., 54, 609, 619

Galbraith, Margaret, 26
Galloway, Dale O., 36
Gardner, Grace M., 272
Gauld, Ross L., 93
Geib, Donna S., 12, 13, 276
Gerhardt, Philipp, 15
Gershenfeld, Louis, 33, 50
Gerwe, E. G., 88, 94
Gingrich, Wendell, 31
Glassman, Harold N., 575
Golub, Orville J., 59
Goodlow, R. J., 268
Gordon, F. B., 75
Gordon, Irving, 276
Gould, Bernard S., 29
Grainger, Thomas H., Jr., 633, 759
Gray, Clarke T., 6
Green, Morris N., 9
Green, R. H., 63
Green, Samuel R., 7
Greenblatt, R. B., 91
Greenspan, Francis S., 49, 93
Griffitts, J. J., 269
Grubb, Thomas C., 51
Grunberg, Emanuel, 45
Grundy, W. E., 30
Gunderson, Millard F., 46, 47
Gunness, Marion, 19, 219
Gunnison, J. B., 70
Gunsalus, I. C., 20, 21, 22, 239

Habel, Karl, 57
Halbert, Seymour P., 26, 86
Halvorson, H. O., 39
Harris, Dale A., 451
Harris, Edna K., 42
Harris, R. G., 668
Harris, Susanna, 278
Harris, T. N., 54
Hartman, Ernest, 3
Heinmets, F., 62
Henderson, N. D., 179
Henle, Gertrude, 278
Henle, Werner, 277, 278
Henley, Thomas, F., Jr., 80
Hennum, Lars A., 17
Henry, B. S., 264
Henry, Jane E., 6, 9
Henry, Richard J., 6, 9
Herdegen, Miriam, 86
Hervey, Francis L., 268
Hilleman, Maurice R., 59
Hillier, James, 5
Hitchner, E. R., 48
Hoag, Eleanor, 279
Hobby, Gladys L., 305
Hodges, A. B., 1
Holm, August, 85
Holtman, D. Frank, 36
Hoster, Herman A., 273
Housewright, Riley D., 6, 9
Hoyt, Robert E., 269
Hudson, N. Paul, 56

Humfeld, Harry, 513, 689
Humphries, James C., 25
Hungate, R. E., 50
Hutchinson, W. G., 45
Hutner, S. H., 18
Hyman, Beverly, 305

Jackson, Elizabeth B., 92
Jamieson, W. A., 371
Jann, Gregory J., 269
Jennison, Marshall W., 55
Johansson, K. R., 35
Johnson, Ann, 53
Johnson, C. W., 268, 667
Johnson, Edwin A., 281
Johnson, M. J., 161
Johnstone, Donald B., 25
Joslyn, Dwight A., 26
Judefind, T. F., 667
Jump, John A., 45

Kahn, Reuben L., 84, 773
Kardon, Zelma G., 245
Karlson, Alfred G., 67
Karow, E. O., 41
Kasai, George J., 20
Kasper, Joseph A., 11, 545
Kauffmann, Gladys, 87
Kavanagh, Frederick, 761
Keller, Helen M., 274
Kelly, E. H., 80
Kelner, Albert, 31
Kempf, J. Emerson, 57
Kersten, H., 274
Kimmelman, Leonard J., 8, 363
King, J. W., 82
Kirchheimer, W. F., 272
Kirty, Ruth A., 71
Kivela, E. W., 43
Klein, Morton, 8, 245, 363
Knaysi, Georges, 4, 5
Knight, S. G., 16
Koch, Marie L., 72
Koomen, J., Jr., 59
Kopper, Paul H., 359
Koprowski, Hilary, 74
Kornfeld, Lottie, 82
Koser, Stewart A., 20
Kraft, Lisbeth M., 276
Kuhn, W. H., 545
Kupperman, H. S., 91

Laffer, Norman C., 90
Lamanna, Carl, 575
Landy, Maurice, 24
Langlykke, A. F., 24, 149
Lapedes, Daniel, 425
Larsen, Alma, 19, 219
Larson, Carl L., 83
Lazarus, Joseph A., 30
Leal, J., 401
Leaver, F. W., 401
Lee, Henry F., 668
Lee, S. B., 535
Leise, J. M., 279
Leiva-Quiros, Alvaro, 709
Le Mense, E. H., 149
Lenert, Tulita F., 305
Leonard, G. F., 94
Levine, H. B., 12
Levine, Max, 27, 661, 785
Levine, Milton Gjelhaug, 269
Levinson, Sidney O., 74
Li, Huan-Ying, 81
Liebmann, A. J., 61, 63
Lincoln, Ralph E., 745
Lind, H. E., 86
Linden, B. A., 32
Lipmann, Fritz, 19
Littman, M. L., 399
Lochry, Harry R., 276
Loewe, Leo, 89
Lofgren, Ruth, 271
Logan, Milan A., 274
Luria, S. E., 79
Lurie, Max B., 270

McBee, Richard H., 51
McCalla, T. M., 34
McCarter, Janet R., 68
McCleskey, C. S., 417, 697, 709
McCoy, Elizabeth, 36
McCoy, O. R., 59
Machamer, H. E., 39
Machata, Helen A., 37
McLaughlin, C. Baxter, 33
McLean, Dorothy J., 599
McQuarrie, E. B., 61
Maculla, Esther S., 62
Mallmann, W. L., 43
Marcus, Stanley, 773
Mayer, R. L., 668
Melnick, Joseph L., 279
Mercer, Florence E., 731
Merchant, Donald J., 80, 271
Metzger, William I., 135
Middlebrook, Gardner, 66
Miesel, G. R. M., 545
Miller, A. Kathrine, 9, 22

Miller, C. Phillip, 8, 467
Miller, E. S., 62
Miller, Ruth E., 88
Milzer, Albert, 74
Moore, Helen Norris, 40
Morgan, Isabel M., 76
Morgan, J. F., 32
Morse, M. L., 28
Moyer, A. W., 271
Mudd, Stuart, 86
Muedeking, Mary R., 39
Myers, Robert P., 42
Myers, William G., 95

Naghski, Joseph, 34
Neter, Irwin, 70
Newman, Arthur S., 37
Nigg, Clara, 59
Niss, H. F., 37
Novak, Milan, 79
Novelli, G. David, 19
Nowman, A. G., 37
Nungester, W. J., 53, 271
Nunheimer, T. D., 535
Nutini, Leo G., 65

O'Kane, D. J., 20
Ordal, Erling J., 44
Ordway, Nelson K., 278
Ottinger, Barbara, 87
Owen, Barbara J., 83

Pansy, Felix, 425
Pelczar, Michael J., Jr., 18
Peltier, George L., 519
Pennell, Robert B., 715
Penner, Lawrence R., 279
Perlman, D., 1
Perlstein, D., 61, 63
Phillips, A. W., Jr., 49
Pierce, Cynthia, 66
Pike, Robert M., 282
Pirone, P. P., 275
Potter, Louise F., 36
Powell, H. M., 371
Pratt, Robertson, 127, 283, 719
Prescott, Benjamin, 87
Proctor, B. E., 49
Puetzer, Bruno, 51

Quisno, Robert A., 43

Rake, Geoffrey, 637
Raleigh, Gordon W., 65, 409
Randall, W. A., 32
Randles, Chester I., 15
Rasmussen, A. F., Jr., 64, 76
Reid, J. J., 30
Reid, Roger D., 90
Reilly, H. Christine, 27, 451
Reiman, Margaret S., 273
Reinstein, C. R., 91
Reynolds, Howard, 38
Rhymer, Ione, 521
Rice, Frances B., 16
Richards, Oscar W., 4
Riddle, Jackson W., 273
Rights, Fred L., 92
Robbins, Frederick C., 77
Rode, L. J., 282
Roepke, Raymond R., 731
Rogosa, Morrison, 12, 13
Rose, Kenneth D., 46, 47
Rosenfeld, William D., 267, 393, 664
Rosenman, Sanford B., 24
Rosenow, Edward C., 92
Rosenstadt, Aaron, 48
Rubenkoenig, Harry L., 43
Rubenstein, A. Daniel, 90
Ruchman, Isaac, 60
Rucker, R. R., 44
Rudert, F. J., 793
Rush, J. M., 10
Russell, Barbara E., 55
Ryan, Francis J., 209

Sage, Dorothy N., 71
Sager, Oscar S., 276
Salem, Nadine, 282
Salle, A. J., 269
Salvin, S. B., 30, 655
Sandage, Curtis, 273, 333
Sanders, Evelyn, 16
Sanders, George P., 276
Saphra, Ivan, 270
Sarles, W. B., 35
Saudek, E. C., 41
Schabel, F. M., Jr., 75
Schatz, Albert, 276
Schaub, Isabelle G., 1
Schenone, John D., 46
Scherago, M., 2
Scherp, Henry W., 78
Schlosser, M. E., 549, 585
Schneider, Lillian K., 209
Schneider, W., 280
Schuhardt, V. T., 282
Schwarz, Lewis H., 30
Scott, T. F. McNair, 277

Sevag, M. G., 88
Shafer, M. V., 268
Shaffer, Frank W., 277
Shanahan, A. J., 183
Shapiro, Stanley K., 35
Shay, Donald E., 72
Shechmeister, I. L., 49, 93
Sherwood, Noble P., 55
Shevky, Marion C., 56
Shrigley, Edward W., 62
Shropshire, R. F., 325
Shu, P., 161
Sigel, M. Michael, 277
Sligmann, Erich, 270
Smadel, Joseph E., 64, 76, 77, 92, 93
Smith, Dorothy G., 67, 253
Smith, Mary Ruth, 52
Smith, R. M., 545
Smith, William Elliott, 715
Smolens, Joseph, 101
Snieszko, S. F., 47, 48
Snyder, G. A., 63
Snyder, Merrill J., 77
Snyder, Thomas L., 641
Solowey, Mathilde, 48
Soule, M. H., 80
Spaulding, Earle H., 48
Spray, Robb Spalding, 15
Stahly, Grant L., 95
Stanier, R. Y., 22, 191, 339
Stansly, P. G., 443, 549, 585
Stark, Orton K., 273, 333
Stark, W. H., 40, 281
Starkey, Robert L., 46
Stavitsky, Abram B., 668
Stier, T. J. B., 23, 280
Stock, Aaron H., 169
Stokes, J. L., 19, 219
Stokes, Julia C., 64
Stone, R. W., 39
Stone, Wilson S., 4, 767
Stubblefield, Esther, 81, 569
Suyemoto, William, 84
Swanstrom, Maryda, 87
Syverton, J. T., 59

Tabachnick, Joseph, 546
Takacs, William S., 275
Tallman, A. W., 88
Tamura, Joseph T., 84
Tanner, F. W., 183
Tanner, Fred W., Jr., 38
Taylor, C. C., 47
Thayer, J. D., 71
Thiele, Elizabeth H., 71
Thomas, Girard W., 65, 527
Thomas, John O., 546
Thompson, Richard, 53
Tittsler, Ralph P., 12, 13, 276
Tobie, Walter C., 543
Toomey, John A., 275
Tripp, L. M., Jr., 85
Turfitt, G. E., 557
Turner, Thomas B., 81
Tytell, Alfred A., 274
Tytell, Alice G., 274

Umbreit, W. W., 21
Updegraff, David M., 268
Updyke, Elaine L., 84, 609, 619

Vanderlinde, Robert J., 777
Van Lanen, James M., 38, 149
Vera, Harriette D., 14
Verwey, W. F., 71
Villalon, Flora T., 84

Waksman, Selman A., 67, 253, 451
Waldo, John F., 78
Walker, Harry A., 669
Wallace, G. I., 521
Walter, Homer E., 276
Warren, George H., 24
Warren, Joel, 76, 77
Wasserman, Aaron E., 29
Wattie, Elsie, 73
Weaver, R. H., 2, 28, 69, 280
Weber, George R., 44
Wedberg, Stanley E., 447
Weiser, Russell S., 17, 272
Weiss, Charles, 56
Welch, H., 32
Wells, W. F., 51, 277
Welsh, Ashton, 60
Welshimer, Herbert J., 95
Werkman, C. H., 23
West, Mary G., 2
Wetterlow, Leslie H., 31
Whatley, L. R., 62
Whiffen, Alma J., 41
White, A. G. C., 23
White, Morris F., 545
Williams, Ned B., 14
Williston, Elizabeth H., 563
Wilmer, Dorothy L., 633

Wilson, J. B., 12, 15
Wilson, P. W., 37
Wilson, William, 80
Witlin, Bernard, 33, 50
Wolf, Frederick T., 280
Wood, W. Avery, 21
Wood, W. Barry, Jr., 52
Woodruff, H. B., 42, 535
Woods, J. K., 40
Woodward, Carl R., Jr., 375
Woolley, D. W., 63
Wright, H. E., 91
Wyss, Orville, 4, 282, 767

Yegian, Diran, 777
Youmans, Anne Stewart, 5, 409
Youmans, Guy P., 65, 409, 563
Young, G., 109
Young, Viola Mae, 4

Zia-Walrath, Pari, 563
ZoBell, Claude E., 393

INDEX OF SUBJECTS

Acetic acid formation from alcohol by *Pseudomonas*, 191
Acetylmethylcarbinol, quick microtechnique for, 69
Achromobacter, study of genus, 10
Acid-fastness, nature of, 777
Acridines inhibit influenza virus, 64
Actidione, antibiotic from *Streptomyces*, 41
Actinomyces, acid production in genus, 29
— *bovis*, reaction to sulfonamides and antibiotics, 79
— *coelicolor* producing different pigments, 213
— *flaveolus* mutation by X-rays, 31
— *griseus*, phage against, 451, 535, 545
— *griseus*, physiology of, 1
Actinomycetes, antibiotic to tubercle bacteria, 563
— do not affect poliomyelitis virus, 276
— of Bikini Atoll, 25
— producing an antibiotic, 25
Actinophage for *Streptomyces griseus*, 41, 451, 535, 545
Adaptation of *Phytomonas stewartii*, 745
Adaptive enzymes, 339
Aggregates of bacteria dispersed by sonic energy, 325
Agrobacterium, flagellation of, 681
Air contamination, *see* Dust bacteria
Air sampling, 277
Alcohol oxidized to acetic acid by *Pseudomonas*, 22
Alcoholic fermentation under reduced pressure, 280
Amino acids affecting glycolysis, 21
— acids affecting mold growth, 401
Ammonia assimilation by *Brucella*, 15
— production affecting associated organisms, 209
— utilization depending upon oxidation rate, 599
Amylase production by submerged molds, 149
Anaerobes, citrate-positive, serology of, 11
Anaphylaxis in fish, 82
Anionic detergents unable to counteract cationic detergents, 245
Antagonism of *Bacillus cereus*, 268
— of coliform bacteria against *Shigella*, 26
Antibiotic activity, methods of measurement, 443, 563
— from *Bacillus subtilis*, 24
— from *Bacillus polymyxa*, 24
— from marine microorganisms, 393
— from *Pseudomonas aeruginosa*, 109
— from soil actinomycete, 25
— from wheat bran, 513
Antibiotic microorganisms discovered by spray method, 443
— relationship in enterobacteria, 27
Antibiotics, actidione, 41
—, bacillin, 793
—, inhibiting doses of various, 761
—, myomycin from actinomycete, 281
—, polymyxin, 549
—, subtilin, 269
—, synergism of, 8
Antibiotics assay methods, agar diffusion, 585
— assay methods, turbidimetric, 26
— in the *Enterobacteriaceae*, 785
Antigen persistence at site of inoculation, 86
Antihistamine substances do not help in tuberculosis, 82
Antimalarial agents potentiated by drugs, 669
Apparatus for discovering antibiotic organisms, 443
Arsenicals detoxified by BAL, 80
Arthrobacter, newly defined genus, 301
Ascoli test applied to tularemia, 83
Ascorbic acid increasing phagocytosis, 53
Ashbya gossypii for commercial riboflavin production, 38
Aspartic acid formation through biotin, 19
— acid substituted by biotin, 219
— acid synthesis, 219
Aspergillic acid, production by *Aspergillus flavus*, 375
— acid, recognition of, 543
Aspergillus amylase, manufacture of, 149
— *niger*, citric acid formation retarded by Mn, 161
— *niger*, mutant produced by X-rays, 274

BAL interfering with arsenicals, 80
B.C.G. experiments with bovines, 89
Bacillus cereus, antagonistic properties, 268
— *cereus*, pathogenicity and relation to *Bacillus anthracis*, 58
— grouping by lecithinase, 11
— *lentimorbus*, growth requirements, 267

— *mycoides*, electron microscope study of, 4, 5
— *polymyxa* producing an antibiotic, 24, 549
— *popilliae*, growth requirements, 267
— *subtilis* producing an antibiotic, 24
Bacillin production by soil bacteria, 793
Bactericidal efficiency test by oval tube method, 42
Bacteriophage, enterococcal, 500
— of *Leuconostoc mesenteroides*, 709
— of *Streptomyces griseus*, 41, 451, 535, 545
— reactivation after ultraviolet inactivation, 79
Bacteriostasis, *see also* Disinfectants
— by cerium salts, 417
— by lanthanum salts, 417
— by *p*-aminosalicylic acid, 409
— by sulfanilamide, 5
— by thallium salts, 417
Bacteriostatic doses for 17 compounds, 761
Benzoic acid oxidation inhibited by streptomycin, 671
Biotin, *see also* Vitamin
— free diet affecting fecal flora of chicken, 35
— helps aspartic acid formation, 19
— requirement of *Piricularia oryzae*, 401
— substituting for aspartic acid, 219
Blood factors affecting bacterial variation, 545
— storage does not decrease V-factor, 31
Botulinum toxin, isolation and properties of, 575
Bran (wheat) containing antibiotic, 513
Brucella, oxygen relations, 16
— *abortus*, dissociants of, 2
— *abortus* 19, assimilating ammonia, 15
— *abortus* 19, differentiation of, 12
— suppressed by certain lots of tryptose, 282
— variation controlled by blood factors, 545
Brucellosis, blocking of agglutination, 269
— not helped by streptomycin, 80

Calcium requirement of purple bacteria, 18
Capsule-dissolving factor, 25
Carbon dioxide replacement in metabolism, 23
Cationic disinfectants, *see* Quaternary ammonium compounds
Cellulose decomposition by bacterium, 50, 51
Cerium salts bacteriostatic, 417
Cheddar cheese quality affected by added lactobacilli, 276
Chemotherapy in chick embryos, 668
Chick embryos for tuberculosis studies, 668
Chicken, bacteriology of boned, 47
Chlamydozoaceae, life cycle of, 637
Chorioallantoic fluid agglutinates *Staphylococcus*, 62
Choriomeningitis, lymphocytic, virus transmitted by *Trichinella*, 59
Citric acid production by *Aspergillus* decreased by Mn, 161
— acid production by fungi, 71
Clostridia fermenting tartrates, 547
— of gas gangrene and anaerobic infections in Italy, 169
Clostridium botulinum, isolation of its toxin, 575
— *felsineum*, pectin fermentation, 36
— *gummosum*, 15
— *histolyticum*, measurements of its collagenase, 55
— *lacto-acetophilum* n.sp., 381
— *microsporum*, 15
— *nauseum*, 15
— *novyi* in war wounds, 169
— *perfringens* in war wounds, 169
— *perfringens* makes mucopolysaccharide, 274
Cobalt affects penicillin sensitivity, 719
Coenzyme A contains pantothenic acid, 19
Coliform bacteria, *see also* Paracolon
— bacteria, new media for their detection, 73
— bacteria with *Salmonella* antigens, 270
Collagenase of *Clostridium histolyticum*, 55
Conidia formation affected by vitamins and amino acids, 401
Contamination of molds by bacteria, rapid discovery, 280
Corynebacterium, a sometimes wrongly used name, 10
— *diphtheriae*, nontoxic strains used for immunization, 54, 609
— *diphtheriae* inhibited by saliva, 53
— misnomer for *Arthrobacter*, 291
— protein extracts react with antibodies, 86
— *xerose*, pathogenicity of, 56
Counting bacteria, error in plating methods, 641
— bacteria, Poisson series applies, 73
Creatinase by *Pseudomonas aeruginosa*, 359
Cresol production from tyrosine, 39
Cryophilic bacteria in foods, 31
Culture tube with double compartment, 546

Cutaneous reaction to streptococcal antibody-antigen injection, 92
Cytochemical mechanism of penicillin, 719

Death by X-rays, order of, 731
Decalso removes pyrogenicity from protein solutions, 715
Dehydrogenation of fatty acids, 267
Diarrhea from *Salmonella pullorum*, 667
Dibromsalicylaldehyde as antiseptic, 33
Dicarboxylic acid metabolism of bacteria, 15
Diet affecting susceptibility of mice to *Mycobacterium tuberculosis*, 66
Digestive tract of insects, passage of bacteria, 447
Dihydrostreptomycin, mode of action, 7
Diphtheria, etiology of malignant, 619
— not due to synergism with hemolytic streptococci, 619
Diphtheroids from conjunctiva, pathogenicity of, 56
Diplococcus pneumoniae polysaccharide aerosol immunizes mice, 87
Disinfectant assay, egg injection method, 50
Disinfectants, acridines against influenza virus, 64
—, *Actinomyces bovis* response to various, 79
—, arsenicals detoxified by BAL, 80
—, dibromsalicylaldehyde, 33
—, cationics, 43, 44, 245
—, fatty acids as fungicides, 45
—, flavonols, 34
—, hexenolactone, 268
—, iodonium compounds, 33
—, nitrofuran compounds, 119
—, *para*-aminosalicylic acid against *Mycobacterium*, 65, 409
—, quaternary ammonium compounds, 43, 44, 245, 668
Dissociation of *Eberthella typhosa* by sodium acenaphthene(5)sulfonate, 633
Double compartment culture tube, 546
Drying of bacteria, 17
Drug resistance, acquisition of, prevented by other drugs, 363
— resistance, inhibition of, 8
— resistance changed by bacterial extracts, 282
Dust bacteria, measuring airborne particles, 51
— bacteria controlled by oil-water emulsion, 49
— bacteria decreased by oiling floors, 94
Dysentery antigen, oral immunity test for, 371
— immunization by feeding *Shigella sonnei*, 274

Eberthella typhosa dissociated by chemical, 633
Egg injection method for disinfectant assay, 50
Eggs, incompletely cooked, infected, as cause of diarrhea, 667
Electron microscopy, 271
Electronic preservation of bread, 668
Encapsulated bacteria phagocytized, 52
Encephalitis vaccine, antibody response to, 76, 77
Endocarditis, enterococci of, 506
Enterobacter differentiation by eosin methyl-green sulfite agar, 662
Enterobacteria, *see also* Paracolon bacteria, *Eberthella*, *Salmonella*, *Shigella*, *Proteus*
—, differentiation of paracolons, 1
—, new media for their detection, 73
—, paracolon resembling *Shigella*, 179
—, serology of *Proteus*, 2
—, serology relation of *Salmonella-Shigella*, 4
Enterobacteriaceae, antibiotic relationships, 27, 785
—, contradiction of physiology and serology, 270
Enterococcal bacteriophage, 500
Enterococci associated with human disease, 495
— in human feces, 545
Eosin methyl-green sulfite agar for *Enterobacter* differentiation, 662
Epidemiology of poliomyelitis, 75
Eremothecium ashbyii synthesized riboflavin, 40
Erythrocyte agglutination by virus inhibited, 62, 63
Erythrocytes adsorb influenza virus, 62
Escherichia coli, globular mutant by streptomycin, 81
— *coli*, metabolic difference between phage-susceptible and phage-resistant strains, 78
— *coli*, round-cell variant, 569
— *coli*, X-ray-induced mutations, 731
— *coli* changed morphologically by penicillin, 183

Estrogen retarding tuberculosis, 270
Etiology of malignant diphtheria, 619

Fatty acids, dehydrogenation of, 267
— acids fungicidal for *Trichophyton*, 45
Fecal bacteria of chicken affected by food, 35
Fermentor for submerged cultures, 689
Fish, anaphylaxis in, 82
Flagellation and motility, 681
Flavonols as disinfectants, 34
Flies carrying poliomyelitis virus, 279
Foam breaker, mechanical, 689
Folic acid, *see* Vitamin
Food bacteriology, boned chicken, 47
— bacteriology, multiple *Salmonella* types in egg powder, 48
— bacteriology, poultry evisceration, 46
— bacteriology, *Staphylococcus* in frozen foods, 49
—containing cryophilic bacteria, 31
Formate ricinoleate lactose broth for water analysis, 661
Frozen food with surviving *Staphylococcus*, 49
Fungi, pathogenic, selective medium for, 91
—, streptomycin tolerance, 399
Fungus respiration, microrespiration method, 16
Furacin, mode of action, 9

Gaffkya causing lobster disease, 47, 48
Gas gangrene by clostridia in Italy, 169
Gastro-enteritis epidemic by paracolon type, 277
Glycerol fermentation of *Streptococcus faecalis*, 239
— formation by yeast affected by oxygen, 23
Glycolysis affected by amino acids, 21
Gonococcus, see *Neisseria gonorrheae*
Gram stain, role of halogens, 3
— stain decreased by penicillin, 283
Granuloma inguinale, causal agent, 91

Handling, mechanical, not affecting growth, 30
Hemagglutination by virus inhibited, 62, 63
Hemophilus influenzae, variants of, 3
— *influenzae* antiserum production, 87, 94
— *influenzae* favored by yeast concentrate, 70
— *pertussis*, simple liquid culture medium, 71
— *pertussis* studied with the electron microscope, 275
Hemolytic streptococci, *see* Streptococci, hemolytic
Hen feces, bacterial flora affected by food, 35
Herpes simplex virus isolation, 60
Hexenolactone, antibacterial *in vivo*, 667
—, antibacterial properties, 268
Histoplasma capsulatum, cultivation of, 655
— *capsulatum*, cultural study, 30
— *capsulatum*, reverting to yeast phasis, 263
Hodgkin's syndrome, cytopathology of, 273
Hyaluronic acid viscosity reduced by hemolytic streptococci, 55, 282
Hydrocarbon oxidation, anaerobic, by sulfate reduction, 664
Hydrogen peroxide formation by *Lactobacillus brevis*, 272
— peroxide induces mutation of *Staphylococcus*, 767
— peroxide production by streptococci in saliva, 53
— sulfide production, quick method, 28

Immunization against diphtheria by nontoxic strains, 54, 609
Influenza A virus, a new strain of, 277
— virus increases susceptibility to hemolytic streptococci, 56
— virus, inhibited by acridines, 64
— -virus-inhibiting substances evaluated, 63
— virus interaction with red cells, 62
— virus multiplication inhibited by polysaccharides, 63
— virus propagation in chick embryo, 61
— virus vaccine, quantitative assay, 60
Insect digestive tract, passage of bacteria, 447
Intestinal tract of insects, passage of bacteria, 447
Iodonium compounds as disinfectants, 33

Japanese beetle killed by two bacilli, 267
— encephalitis vaccine, 76, 77

Kahn reaction in young and old rabbits, 773
Klebsiella rhinoscleromatis, cause of scleroma, 269

L_1 of Klieneberger related to *Streptobacillus moniliformis*, 231
Lactate fermented to butyrate, 381
Lactobacilli, oral, serology of, 14
— in Cheddar cheese manufacture, 276
Lactobaccillus, taxonomy of genus, 12
—, vitamin requirements, 13
— *brevis* produces hydrogen peroxide, 272

— *casei*, fermentation rate in different media, 39
— *enzymothermophilus*, 12
— surface growth with various peptones, 14
Lanthanum salts bacteriostatic, 417
Lecithinase for identification of *Bacillus*, 11
Legume nitrogen fixation, see *Rhizobium*, 37
Leprosy, serological reaction with lipid antigen, 84
Leuconostoc mesenteroides from cane juice, 697, 709
— *mesenteroides* identified by phage and serology, 709
Lipid hydrolysis in cells by penicillin, 127
Lipids on surface of *Micrococcus aureus*, 17
Lobster disease by bacteria, 47, 48
Lymphocytic choriomeningitis virus grown on chick embryos, 275
Lymphogranuloma-psittacosis group of organism, life cycle of, 637
Lysozyme antiserum, production and properties, 101

Manganese salts retarding citric acid formation, 161
Mannitol fermented anaerobically by staphylococci, 266
Meningococcus, see *Neisseria meningitidis*
Metabolism of bacteria affected by immune serum, 88
Method for identifying antibacterial substances, 761
Methylene blue reduction affected by organic acids, 275
Microbacterium lacticum, nutrition of, 18
Microbic dissociation of *Brucella abortus*, 2
— dissociation of *Neisseria intracellularis*, 175
Micrococcus aureus, surface lipids, 17
Micromanipulator handling does not injure cells, 30
Mineral oil for preservation of cultures, 264
Mold contamination by bacteria rapidly discovered, 280
— spores killed by electronics, 668
Molds as source of riboflavin, 519
— in submerged culture produce amylase, 149
Monkey resistance to *Shigella dysenteriae*, 57
Motility and flagellation, 681
Mucopolysaccharide from *Clostridium perfringens*, 274
Mumps, complement fixation antigens in, 278
Mutation, temperature coefficient, 745
Mutations in bacteria, 2, 4
— of *Aspergillus* by X-rays, 274
— of *Escherichia coli* by X-rays, 731
— of *Neisseria* in regard to streptomycin resistance, 467
— of *Phytomonas stewartii*, 745
— of *Staphylococcus* by H_2O_2, 767
Mycobacteria, benzoic acid metabolism inhibited by streptomycin, 671
Mycobacterium, nature of acid-fastness, 777
—, zoogleal forms of, 64
— Krassilnikov same as *Corynebacterium*, 291
— *smegmatis*, bacteriophage for, 272
— *tuberculosis*, Actinomycetes antibiotic, 563
— *tuberculosis*, differences between virulent and avirulent strains, 66
— *tuberculosis*, effect of diet on susceptibility of mice, 66
— *tuberculosis*, metabolic changes through streptomycin, 68
— *tuberculosis*, myomycin, a new antibiotic against, 281
— *tuberculosis*, proteins of culture filtrates, 68
— *tuberculosis*, increasing resistance to streptomycin, 67
— *tuberculosis*, simple medium for, 278
— *tuberculosis*, susceptibility of different strains of mice, 66
— *tuberculosis* arrested and killed by streptomycin, 253
— *tuberculosis* arrested by *p*-aminosalicylic acid, 65, 409
— *tuberculosis* arrested by tissue extracts, 65
— *tuberculosis* infection prevented by B.C.G., 89
Myomycin, a new antibiotic from an actinomycete, 281

Nasal cavity, method of counting bacteria, 51
Neisseria gonorrheae, isolation depending on menstrual cycle, 72
— *gonorrheae*, rapid identification, 71
— *intracellularis*, microbic dissociation, 175
— *meningitidis*, streptomycin-resistant variants, 467
Neurospora, biochemistry of, 29
— mutant requiring sulfonamide, 195
Nicotinic acid overdose inhibits growth, 20
Nitrate reduction, quick method, 28
Nitrofuran compounds, mode of action, 119
Nitrogen fixation *in vitro* by *Rhizobium*, 37
—-mustard causes bacterial mutation, 767

Nucleoprotein extracts of bacteria alter drug resistance, 282
Nucleoproteins, antigenic, from hemolytic streptococci, 54
Nucleus of *Bacillus mycoides* demonstrated, 4

Optical glass spoiled by microbes, 45
Oral immunity tests of dysentery antigen, 371
Osteomyelitis in rats by *Salmonella typhimurium*, 57
Oval tube method for testing disinfectants, 42
Oxygen consumption and NH_3 utilization for growth, 599
— controlling growth of *Brucella*, 16
— influencing glycerol formation by yeast, 23

Pantothenic acid, *see also* Vitamin
— acid decomposed by *Pseudomonas*, 135
— acid in bacterial metabolism, 19
para-Aminosalicylic acid against *Mycobacterium*, 65
— acid bacteriostatic for *Mycobacterium tuberculosis*, 409
Paracolon bacilli, differentiation of, 1
— bacteria, anaerogenic, serologically like *Shigella sonnei*, 179
— type causing gastro-enteritis, 277
Pasteurella pestis phage acting on *Salmonella* and *Shigella*, 70
Pectin fermentation by *Clostridium felsineum*, 36
Penicillin, effect of different types on spirochetes, 81
—, effects on gram-positive and gram-negative bacteria, 719
—, method of assaying mixtures, 425
—, mode of action, 6
—, mode of action, effect on gram stain, 283
—, mode of action on vacuoles, 127
—, mutual interference of different types, 425
— assay of mixtures, 425
— changes morphology of *Escherichia coli*, 183
— efficiency increased by impurities, 305
— efficiency of different concentrations, 6
— inactivates SH groups, 727
— inactivation by hydroxylamine, 32
— level determination in urine, 27
— level in animals, prolongation of, 90
— resistance prevented by other drugs, 363
— selectivity, cause of, 719
— stability by buffering, 546
Penicillinase isolation and utilization, 32
Penicillium notatum oxidizes carbohydrates, 280
— *notatum* respiration, 16
Pertussis vaccine assay, 85
Phagocytosis and ascorbic acid, 53
— observed in dark-field, 271
— of encapsulated bacteria, 52
Phase microscope in colony studies, 4
Phenol production by marine bacteria, 268
— production from tyrosine, 39
Phenoxy-ethyl-dimethyl-dodecyl-ammonium bromide, 668
Phenylmercuric nitrate mode of action, 527
Photographic negatives spoiled by microbes, 45
Phytomonas stewartii, mutations of, 745
Pigment production by *Actinomyces coelicolor* varied by pH, 213
Piricularia oryzae, nutritional requirements, 401
Plant growth regulators destroyed by soil microorganisms, 37
Plasmodium cathemerium inhibited by drugs, 669
Plate count methods, errors of, 641
Pleomorphism in *Mycobacterium*, 64
Pleuropneumonialike organisms from *Hemophilus*, 3
Pneumococcal polysaccharide, assay of, 273
— polysaccharide, estimation of, 333
Pneumonia, immunization by inhaled polysaccharide, 87
Podophyllin does not affect *Eberthella typhosa*, 759
Polymyxin, 549
— assay by agar diffusion method, 585
Poliomyelitis, active immunity in monkeys, 76
— in rats can be accelerated, 275
— virus, epidemiology study, 75
— virus in flies, 279
— virus not affected by soil actinomycetes, 276
— virus transmitted to mice, 74
Polysaccharide, pneumococcal, assay of, 273
—, pneumococcal, method for measurement, 333
— of *Clostridium perfringens*, 274
— of plants immunizes against pneumonia, 87

— of pneumococcus immunizes, 87
Population change through mutation, 751
Pork controls antigenicity of diphtheria bacteria, 54, 609
Potentiation of antimalarial agents, 669
Poultry evisceration, bacteriology of, 46
Preservation of cultures under mineral oil, 264
Proactinomyces decomposing steroids, 557
Protein, radioactive, location in tissues, 95
Proteus mirabilis, serology of, 2
Pseudomonas aeruginosa, creatinine-decomposing strain, 359
— *aeruginosa*, pigments and antibiotics, 109
— *aeruginosa*, unusual strains, 30
— oxidizing alcohol to acetic acid, 22, 191
Psittacosis lymphogranuloma venereum, antigen fractionation, 59
— virus in chick embryos, 59
Psychrophilic bacteria in foods, 31
Pullorum antigens, comparison of different types, 36
Purple bacteria, calcium requirement, 18
Pyocyaneus, see *Pseudomonas aeruginosa*
Pyocyanin, 109
Pyridoxal phosphate as tryptophanase coenzyme, 21
Pyrogen tests not affected by time of day, 91
Pyrogenicity of protein solutions, 715
Pyruvate oxidation, accessory factor for, 20
Pyruvic acid metabolism of streptococci, 22

Q-fever, vaccination against, 77
Quaternary ammonium compounds, assay difficulties, 43
— ammonium compounds, inhibitors for, 44
— ammonium compounds, mode of action, 43
— ammonium compounds, PDDB, 668
— ammonium compounds, reversal and specificity, 245

Rabies infection studied on chick embryos, 74
Ragweed pollen, chemistry and immunology, 271
Red blood cells, *see* Erythrocytes
Redox potential upset by furacin, 119
Respiration of cells affected by immune sera, 88
Respiration of *Fusarium* and *Penicillium*, 16
Respiratory disease decreased by oiling floors, 94
Rheumatic fever prophylaxis with sulfonamides, 278
Rhizobium, flagellation of, 681
— fixing nitrogen by means of hemoprotein, 37
Riboflavin manufacture by *Ashbya gossypii*, 38
— production by molds, 519
— synthesis by *Eremothecium ashbyii*, 40
Rice blast disease by *Piricularia oryzae*, 401
Rickettsia burneti, antibodies against, 77
— *orientalis*, strain variation, 92, 93
Root canals of teeth, culture method of their bacteria, 72

SH, *see* Sulfhydryl
Saliva inhibiting diphtheria, 53
Salmonella, lactose-fermenting, 270
—, multiple types in egg powder, 48
— *pullorum* causing diarrhea, 667
— sensitivity to streptomycin, 90
— serologically related to *Shigella*, 4
— strains from the Pacific, 265
— strains susceptible to *Pasteurella* phage, 70
— *typhimurium* causing osteomyelitis in rats, 57
Scleroma, bacteriology of, 269
Serology of enterococci, 501
Serratia marcescens, oxygen and ammonia utilization, 599
Shigella antagonized by coliform bacteria, 26
— *dysenteriae* tested on monkeys, 57
— serologically related to *Salmonella*, 4
— *sonnei* for immunization against dysentery, 274
— *sonnei* resembled by paracolon species, 179
— strains susceptible to *Pasteurella* phage, 70
Simultaneous adaptation, 339
Single-cell isolation does not injure bacteria, 30
Smallpox vaccine can be diluted with beef serum, 281
Sodium acenaphthene sulfonate causing microbic dissociation, 633
Soil fungi decompose straw, 35
— improved by straw mulching, 34
— microorganisms destroy plant growth regulators, 37
Sonic energy to disperse bacterial aggregates, 325

Spirochaeta plicatilis, free-living, cultivation of, 483
Spray apparatus for antibiotic microorganisms, 443
Staphylococci ferment mannitol anaerobically, 266
Staphylococcus aureus, agglutinated by chorioallantoic fluid, 62
— *aureus*, chemically induced mutation, 767
Steel corrosion by sulfate-reducing bacteria, 46
Sterility testing of nonaqueous preparations, 32
— testing of penicillin, 32
Steroid degradation by soil microbes, 557
Straw decomposition by soil fungi, 35
— mulching improves soil condition, 34
Streptamine and streptidine do not inhibit benzoate metabolism, 671
Streptobacillus moniliformis related to L_1 of Klieneberger, 231
Streptococcal antibody and antigen causing cutaneous reaction, 92
— protein on oil induces type-specific antibodies, 85
Streptococci, hemolytic, fractionation of cell contents, 54
—, hemolytic, mode of spreading on membranes, 55
—, hemolytic, not accessory factor in diphtheria, 619
—, hemolytic, susceptibility to, increased by influenza, 56
— associated with human disease, 495
— in air decreased by oiled floors, 94
— not of group A in human infection, 69
— of capsulated group A destroy hyaluronic acid, 282
— produce peroxide in saliva, 53
Streptococcus bovis and *mitis* in human infections, 69
— *faecalis*, products of glycerol fermentation, 239
— *coelicolor* producing different pigments, 213
— *griseus*, efficient strains, 27
— *griseus* destroyed by phage, 451, 535, 545
— *griseus* produces actidione, an antibiotic, 41
Streptomycin, demonstration of hemolysis inhibition, 279
—, mode of action, 6, 9, 521
—, tuberculostatic and tuberculocidal properties, 253
— adsorption, 6, 8
— affects benzoic acid metabolism of mycobacteria, 671
— as accessory growth factor for *Neisseria* mutant, 467
— bacteriophage, 41
— changes metabolism of *Mycobacterium tuberculosis*, 68
— dosage schedules, 67, 89, 253
— inhibitors in certain media, 521
— producing spherical variant of *Escherichia* coli, 569
— -producing strains of *Streptomyces griseus*, 27
— production in stationary cultures, 42
— resistance, development of, 8
— resistance developed in *Neisseria meningitidis*, 467
— resistance of *Mycobacterium* increasing, 67
— resistance prevented by other drugs, 363
— sensitivity of *Salmonella*, 90
— therapy in tularemia, 84
— tolerance of fungi, 399
— useless in brucellosis, 80
— useless in trypanosomiasis, 80
Subtilin, nature and properties, 269
Sulfanilamide, causing delayed bacteriostasis, 5
Sulfate-reducing bacteria corrode steel, 46
— reducing bacteria oxidizing hydrocarbons, 664
Sulfathiazole inhibiting vitamin synthesis, 9
Sulfhydryl compounds neutralizing mercurials, 527
— groups inactivated by penicillin, 727
Sulfonamide required by *Neurospora* mutant, 195
Sulfonamides prevent recurrence of rheumatic fever, 278
Surface phagocytosis, 52
Synergism in reference to diphtheria, 619
— of antibiotics, 8

Tartrate fermentation, anaerobic, 547
Teeth, bacteria in roof canals of, 72
Temperature affects mutation rate, 747
Thallium salts bacteriostatic, 417
Thermal death rates of yeast cells, 38
Thermophilic cellulose decomposer, 51
Thiamine effect in antigenicity, 613
— overdose inhibits growth, 20
— requirement of *Piricularia oryzae*, 401
Tissue extracts bacteriostatic to *Mycobacterium*, 65

Trepona pallidum, effect of different penicillins, 81
Trichinella transmits virus of choriomeningitis, 59
Trichophyton killed by fatty acids, 45
Trypanosomiasis not helped by streptomycin, 80
Tryptophanase coenzyme, 21
Tryptose may contain *Brucella*-suppressing factor, 282
Tubercle bacteria, see *Mycobacterium*
Tuberculin reaction not delayed by antihistamines, 82
Tuberculosis, bacteremia in, 272
— chemotherapeutic studies with chick embryos, 668
— retarded by estrogen, 270
Tularemia, Ascoli test applied to, 83
—, course of infection, 83
—, streptomycin therapy, 84
Tyrosine as source of phenol and *p*-cresol, 39

Ultraviolet-inactivated phage reactivated, 79
Urine penicillin level abnormally high, 27

V-factor content of stored blood, 31
Vacuole mechanism upset by penicillin, 127
Viability of yeast cultures under mineral oil, 264
Virulence and pH tolerance, 279
Virus, bacterial, *see* Bacteriophage
— adsorption on red cells, 62
— hemagglutination, nonspecific inhibition, 62, 63
Vitamin synthesis inhibited by sulfathiazole, 9
Vitamins, *see also* Biotin, Pantothenic acid, Riboflavin, Thiamine

Water, potability of well water in Kentucky, 280
Water analysis, formate ricinoleate lactose broth, 661
Wheat bran containing antibiotic, 513

X-ray-induced mutations of *Actinomyces*, 31
X-rays produce viable and lethal mutations of *Escherichia coli*, 731
Xanthomonas, serological study of genus, 349

Yeast, *see also* Alcoholic fermentation
Yeast fermentation decreased by added nitrogen, 40